

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: MOLLY CEPERLEY Examiner # 59757 Date: 12/27/04  
 Art Unit: 1641 Phone Number 2-0813 Serial Number: 101038,626  
 Mail Box and Bldg/Room Location: Rem 3A51 Results Format Preferred (circle) PAPER DISK E-MAIL  
 ↳ Rem 3C70

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: 01/08/01

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

① Please search for the compounds shown in claims 8-15. Note the different structures in claims 8, 10, 11 + 14. Prefer linkers shown in claim 9. Prefer dendrimer as PAMAM (polyamidoamine).

Terms: chemiluminescence?  
 electrochemiluminescence? (ECL)  
 dioxetane  
 adamantane  
 enzyme-labile  
 benzothiazole  
 dendrimer  
 PAMAM  
 dendritic

12  
 65  
 2

## STAFF USE ONLY

Searcher: \_\_\_\_\_

Searcher Phone #: \_\_\_\_\_

Searcher Location: \_\_\_\_\_

Date Searcher Picked Up: \_\_\_\_\_

Date Completed: 1/6/05

Searcher Prep & Review Time: 45

Clerical Prep Time: \_\_\_\_\_

Online Time: 77

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) 5

Bibliographic \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN 767.23

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Dr.Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

WWW/Internet \_\_\_\_\_

Other (specify) \_\_\_\_\_

*Considered  
02/01/05*

L18 ANSWER (1) OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2002:555736 HCAPLUS  
 DOCUMENT NUMBER: 137:106074  
 ENTRY DATE: Entered STN: 26 Jul 2002  
 TITLE: Dendritic chemiluminescent substrates  
 INVENTOR(S): Sparks, Alison L.  
 PATENT ASSIGNEE(S): Tropix, Inc., USA  
 SOURCE: PCT Int. Appl., 116 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: G01N  
 CLASSIFICATION: 9-14 (Biochemical Methods)  
 Section cross-reference(s): 6, 7  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002057745	A2	20020725	WO 2002-US22	20020108
WO 2002057745	A3	20030313		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG				
US 2002155523	A1	20021024	US 2002-38626	20020108
EP 1358344	A2	20031105	EP 2002-713345	20020108
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004524521	T2	20040812	JP 2002-557779	20020108
PRIORITY APPLN. INFO.: US 2001-259870P P 20010108 US 2001-286383P P 20010426 WO 2002-US22 W 20020108				

*this application*

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002057745	ICM	G01N
JP 2004524521	FTERM	2G054/AA02; 2G054/AA06; 2G054/AB04; 2G054/BA02; 2G054/CE03; 2G054/EA01; 2G054/GA09; 4B063/QA01; 4B063/QA18; 4B063/QQ42; 4B063/QQ61; 4B063/QR03; 4B063/QR10; 4B063/QR12; 4B063/QR15; 4B063/QR16; 4B063/QR32; 4B063/QR41; 4B063/QR48; 4B063/QR50; 4B063/QR56; 4B063/QR66; 4B063/QS03; 4B063/QS24; 4B063/QS33; 4B063/QS34; 4B063/QS36; 4B063/QS39; 4B063/QX01; 4J001/DA01; 4J001/DB01; 4J001/DB08; 4J001/DC06; 4J001/DC12; 4J001/DD14; 4J001/DD15; 4J001/EA12; 4J001/EA23; 4J001/EA25; 4J001/FA03; 4J001/GB14; 4J001/GE02; 4J001/GE04; 4J001/GE06; 4J001/JA20; 4J001/JB31; 4J043/PA13; 4J043/PB08; 4J043/QB06; 4J043/QB07; 4J043/RA05; 4J043/SA06;

4J043/SA62; 4J043/SB01; 4J043/TA11; 4J043/TA12;  
 4J043/TA53; 4J043/TA54; 4J043/TB01; 4J043/UB011;  
 4J043/UB221; 4J043/UB241; 4J043/YB08; 4J043/YB17;  
 4J043/YB21; 4J043/YB37; 4J043/ZA60; 4J043/ZB60

OTHER SOURCE(S):

MARPAT 137:106074

ABSTRACT:

The invention concerns chemiluminescent substrate delivery systems comprising a conjugate a dendrimer and at least one chemiluminescent substrate are provided. The substrate delivery systems can also include a chemiluminescence enhancer. The dendrimer/chemiluminescent substrate conjugates can be used in kits including an enzyme capable of activating the chemiluminescent substrate to produce a per-oxygenated intermediate that decomp. to produce light. The dendrimer/chemiluminescent substrate conjugates can be used in assays to detect the presence of an analyte (e.g., an enzyme, an antibody, an antigen or a nucleic acid) in a sample.

SUPPL. TERM: dendrimer chemiluminescent light substrate conjugate enzyme  
 immunoassay nucleic acid

INDEX TERM: Sulfonic acids, uses  
 ROLE: NUU (Other use, unclassified); USES (Uses)  
 (alkanesulfonic; dendritic chemiluminescent substrates)

INDEX TERM: Sulfonamides  
 Urethanes  
 ROLE: NUU (Other use, unclassified); USES (Uses)  
 (alkyl; dendritic chemiluminescent substrates)

INDEX TERM: Sulfonic acids, uses  
 ROLE: NUU (Other use, unclassified); USES (Uses)  
 (arenesulfonic; dendritic chemiluminescent substrates)

INDEX TERM: Oxides (inorganic), uses  
 Sulfonamides  
 Urethanes  
 ROLE: NUU (Other use, unclassified); USES (Uses)  
 (aryl-; dendritic chemiluminescent substrates)

INDEX TERM: Amides, uses  
 ROLE: NUU (Other use, unclassified); USES (Uses)  
 (aryl; dendritic chemiluminescent substrates)

INDEX TERM: Bond  
 (covalent; dendritic chemiluminescent substrates)

INDEX TERM: Chemiluminescent substances  
 Conjugation (molecular association)  
 DNA sequence analysis  
 Immunoassay  
 Light  
 Luminescence, bioluminescence  
 Membranes, nonbiological  
 Oxidation  
 Test kits  
 (dendritic chemiluminescent substrates)

INDEX TERM: Antibodies and Immunoglobulins  
 Antigens  
 Nucleic acids  
 ROLE: ANT (Analyte); ANST (Analytical study)  
 (dendritic chemiluminescent substrates)

INDEX TERM: Probes (nucleic acid)  
 ROLE: ANT (Analyte); ARG (Analytical reagent use); PRP  
 (Properties); ANST (Analytical study); USES (Uses)  
 (dendritic chemiluminescent substrates)

INDEX TERM: Enzymes, analysis  
ROLE: ANT (Analyte); NUU (Other use, unclassified); ANST (Analytical study); USES (Uses)  
(dendritic chemiluminescent substrates)

INDEX TERM: DNA  
ROLE: ANT (Analyte); PRP (Properties); ANST (Analytical study)  
(dendritic chemiluminescent substrates)

INDEX TERM: Dendritic polymers  
ROLE: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(dendritic chemiluminescent substrates)

INDEX TERM: Amides, uses  
Carboxylic acids, uses  
Esters, uses  
Quaternary ammonium compounds, uses  
ROLE: NUU (Other use, unclassified); USES (Uses)  
(dendritic chemiluminescent substrates)

INDEX TERM: Amines, properties  
ROLE: PRP (Properties)  
(polyamines, nonpolymeric, amido, carboxylic acid, hydroxyl, amino surface group derivs.; dendritic chemiluminescent substrates)

INDEX TERM: Solubilization  
(water; dendritic chemiluminescent substrates)

INDEX TERM: 6788-84-7DP, 1,2-Dioxetane, derivs.  
113818-92-1DP, reaction with dioxetane  
163442-67-9P, Starburst 4th Generation  
ROLE: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(dendritic chemiluminescent substrates)

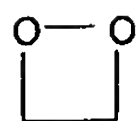
INDEX TERM: 9001-92-7, Protease 9013-05-2, Phosphatase  
9013-79-0, Esterase 9031-96-3, Peptidase  
9032-92-2, Glycosidase 9035-73-8, Oxidase  
14798-03-9D, Ammonium, amino linked  
16749-13-6, Phosphonium 18155-21-0, Sulfonium  
ROLE: NUU (Other use, unclassified); USES (Uses)  
(dendritic chemiluminescent substrates)

INDEX TERM: 63-74-1D, Sulfonylamide, acridinium derivs.  
521-31-3, Luminol 2591-17-5, Luciferin  
3682-14-2, Isoluminol 6788-84-7, Dioxetane  
22559-71-3, Acridinium 122341-56-4  
142849-53-4 443643-96-7  
ROLE: PRP (Properties)  
(dendritic chemiluminescent substrates)

IT 6788-84-7DP, 1,2-Dioxetane, derivs. 113818-92-1DP, reaction with dioxetane 163442-67-9P, Starburst 4th Generation  
RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(dendritic chemiluminescent substrates)

RN 6788-84-7 HCAPLUS

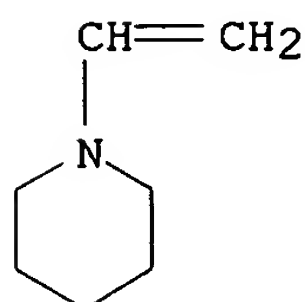
CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 113818-92-1 HCAPLUS  
 CN Piperidine, 1-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 15311-58-7  
 CMF C7 H13 N



RN 163442-67-9 HCAPLUS  
 CN Starburst 4th Generation (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9001-92-7, Protease 9013-05-2, Phosphatase  
 9013-79-0, Esterase 9031-96-3, Peptidase  
 9032-92-2, Glycosidase 9035-73-8, Oxidase  
 14798-03-9D, Ammonium, amino linked 16749-13-6,  
 Phosphonium 18155-21-0, Sulfonium  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (dendritic chemiluminescent substrates)

RN 9001-92-7 HCAPLUS  
 CN Proteinase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9013-05-2 HCAPLUS  
 CN Phosphatase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9013-79-0 HCAPLUS  
 CN Esterase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9031-96-3 HCAPLUS  
 CN Peptidase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9032-92-2 HCAPLUS  
 CN Glycosidase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9035-73-8 HCAPLUS  
 CN Oxidase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 14798-03-9 HCAPLUS

CN Ammonium (8CI, 9CI) (CA INDEX NAME)

$\text{NH}_4^+$

RN 16749-13-6 HCAPLUS

CN Phosphonium (8CI, 9CI) (CA INDEX NAME)

$\text{PH}_4^+$

RN 18155-21-0 HCAPLUS

CN Sulfonium (8CI, 9CI) (CA INDEX NAME)

$\text{SH}_3^+$

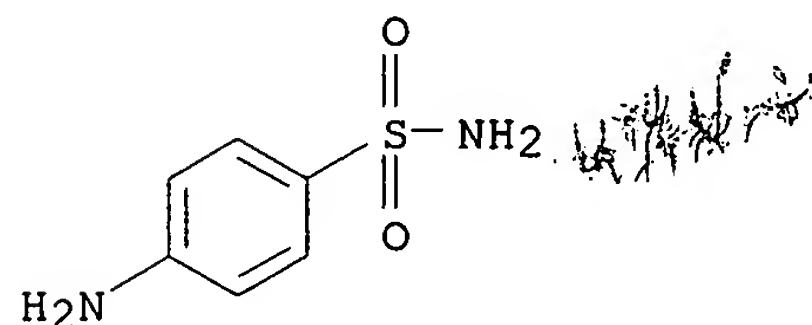
IT 63-74-1D, Sulfonylamide, acridinium derivs. 521-31-3,  
Luminol 2591-17-5, Luciferin 3682-14-2, Isoluminol  
6788-84-7, Dioxetane 22559-71-3, Acridinium  
122341-56-4 142849-53-4 443643-96-7

RL: PRP (Properties)

(dendritic chemiluminescent substrates)

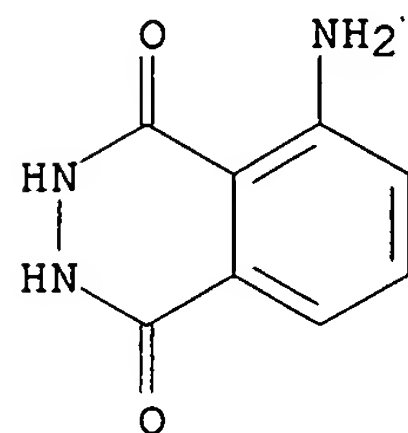
RN 63-74-1 HCAPLUS

CN Benzenesulfonamide, 4-amino- (9CI) (CA INDEX NAME)



RN 521-31-3 HCAPLUS

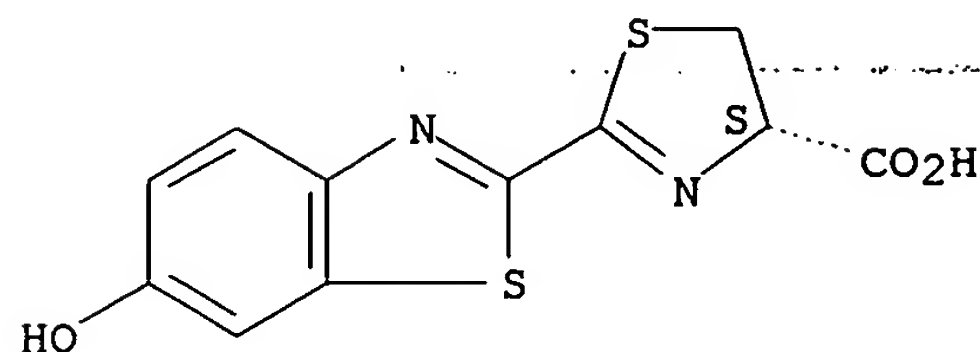
CN 1,4-Phthalazinedione, 5-amino-2,3-dihydro- (6CI, 8CI, 9CI) (CA INDEX NAME)



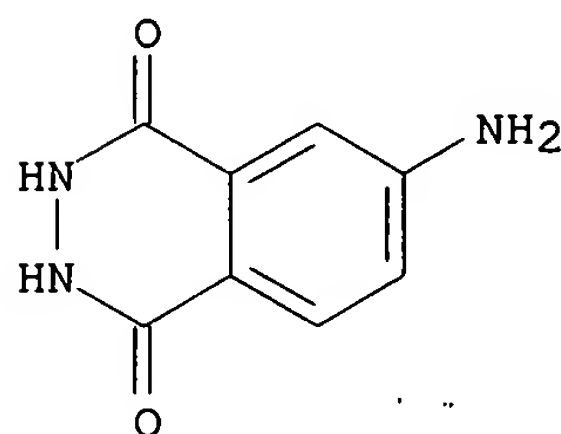
RN 2591-17-5 HCAPLUS

CN 4-Thiazolecarboxylic acid, 4,5-dihydro-2-(6-hydroxy-2-benzothiazolyl)-, (4S)- (9CI) (CA INDEX NAME)

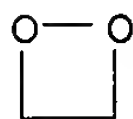
Absolute stereochemistry.



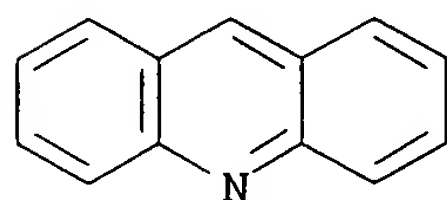
RN 3682-14-2 HCAPLUS  
CN 1,4-Phthalazinedione-6-amino-2,3-dihydro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 6788-84-7 HCAPLUS  
CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)

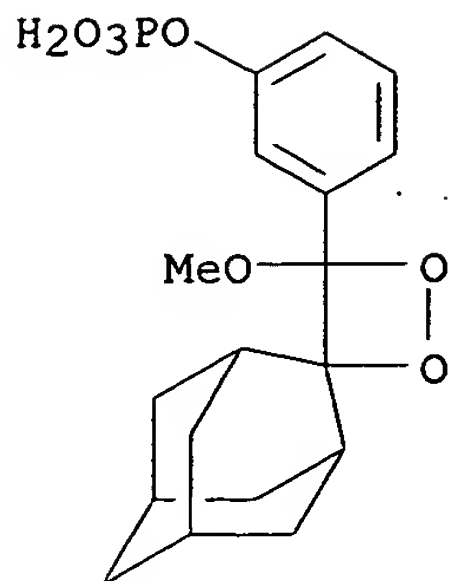


RN 22559-71-3 HCAPLUS  
CN Acridine, conjugate acid (8CI, 9CI) (CA INDEX NAME)

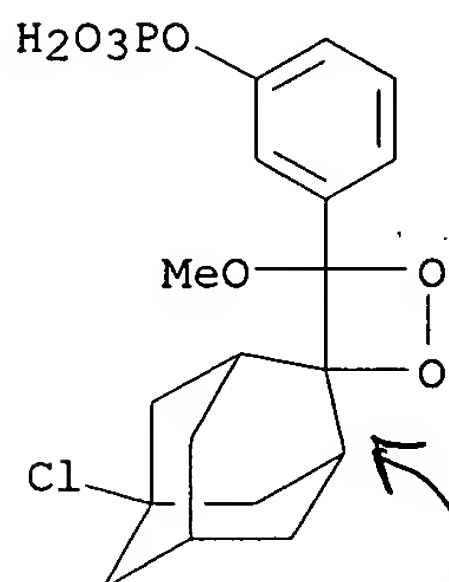


● H<sup>+</sup>

RN 122341-56-4 HCAPLUS  
CN Phenol, 3-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate (9CI) (CA INDEX NAME)



RN 142849-53-4 HCAPLUS  
CN Phenol, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.13,7]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)

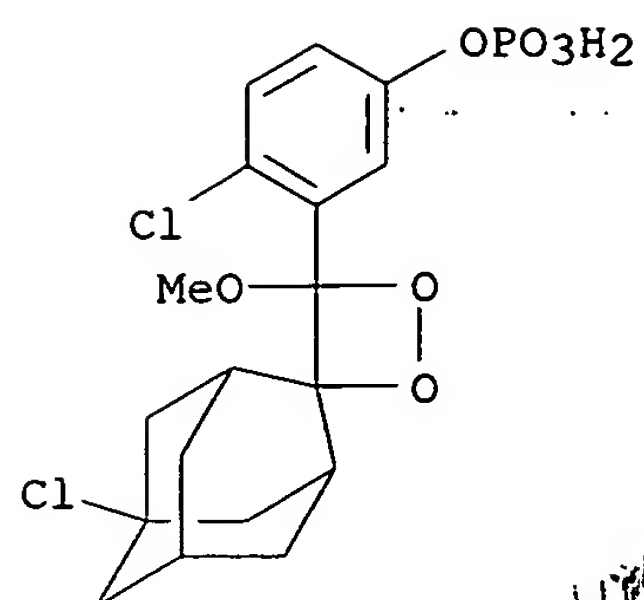


●2 Na

No. structures found with linker attached. }  
Structures indexed without  
linkers

RN 443643-96-7 HCAPLUS  
CN Phenol, 4-chloro-3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.13,7]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)





● 2 Na